**FIG. 1b**

	RATIOS	50	52	54	56	57	58	59
REVERSE 2	-5.40		X					X
REVERSE 1	-2.87	X						X
NEUTRAL	0.00							X
1	6.07				X			X
2	2.68				X	X		
3	1.64		X		X			
4	1.23	X			X			
5	1.00			X	X			
6	0.87	X		X				
7	0.76		X	X				
8	0.67			X			X	

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.40$ ,  $\frac{N_{R2}}{N_{S2}} = 3.00$ ,  $\frac{N_{R3}}{N_{S3}} = 2.03$

RATIO SPREAD	9.07
RATIO STEPS	
REV1/1	-0.47
1/2	2.27
2/3	1.63
3/4	1.34
4/5	1.23
5/6	1.14
6/7	1.14
7/8	1.14

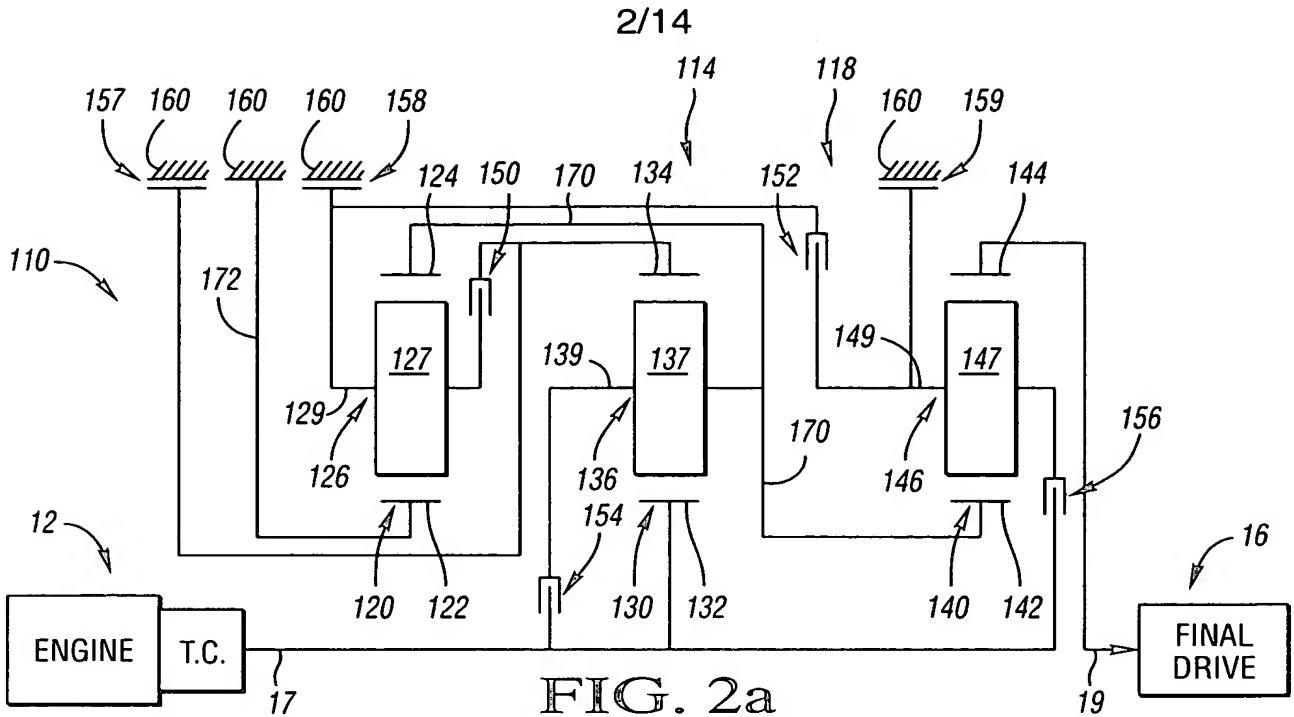


FIG. 2b

	RATIOS	150	152	154	156	157	158	159
REVERSE 3	-7.31						X	X
REVERSE 2	-4.67	X						X
REVERSE 1	-2.91			X				X
NEUTRAL	0.00		X					
1	5.40		X				X	
2	3.45	X	X					
3	2.15		X	X				
4	1.29		X		X			
5	1.00			X	X			
6	0.88	X			X			
7	0.83				X		X	
8	0.74				X	X		

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.51, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.91$$

RATIO SPREAD	7.22
RATIO STEPS	
REV2/1	-0.86
1/2	1.57
2/3	1.60
3/4	1.66
4/5	1.29
5/6	1.13
6/7	1.07
7/8	1.11

3/14

FIG. 3b

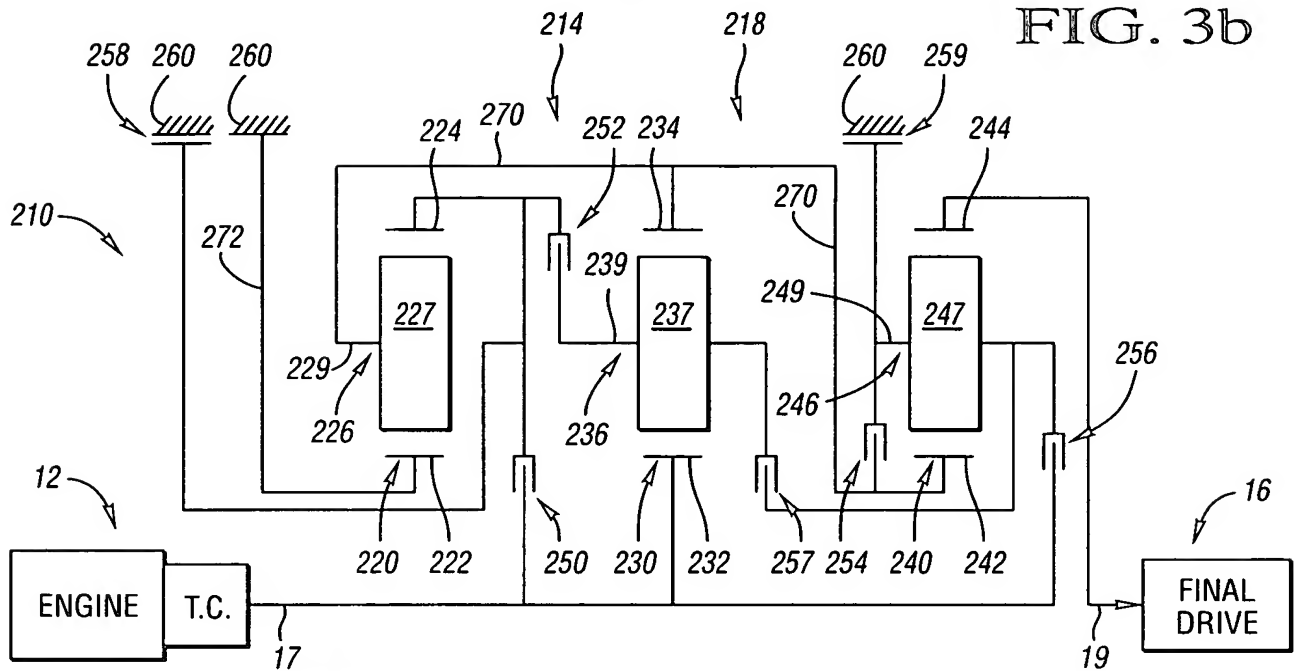


FIG. 3b

	RATIOS	250	252	254	256	257	258	259
REVERSE 2	-4.15		X					X
REVERSE 1	-2.16	X						X
NEUTRAL	0.00							X
1	4.48					X		X
2'	2.78		X	X				
2	2.40					X	X	
3	1.59		X			X		
3'	1.44	X		X				
4	1.22	X				X		
5	1.00				X	X		
6	0.83	X			X			
7	0.70		X		X			
8	0.60				X		X	

(X = ENGAGED CLUTCH)

RING GEAR / SUN GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.27$ ,  $\frac{N_{R2}}{N_{S2}} = 3.00$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	7.48
RATIO STEPS	
REV2/1	-0.93
1/2	1.87
2/3	1.50
3/4	1.31
4/5	1.22
5/6	1.21
6/7	1.18
7/8	1.17

4/14

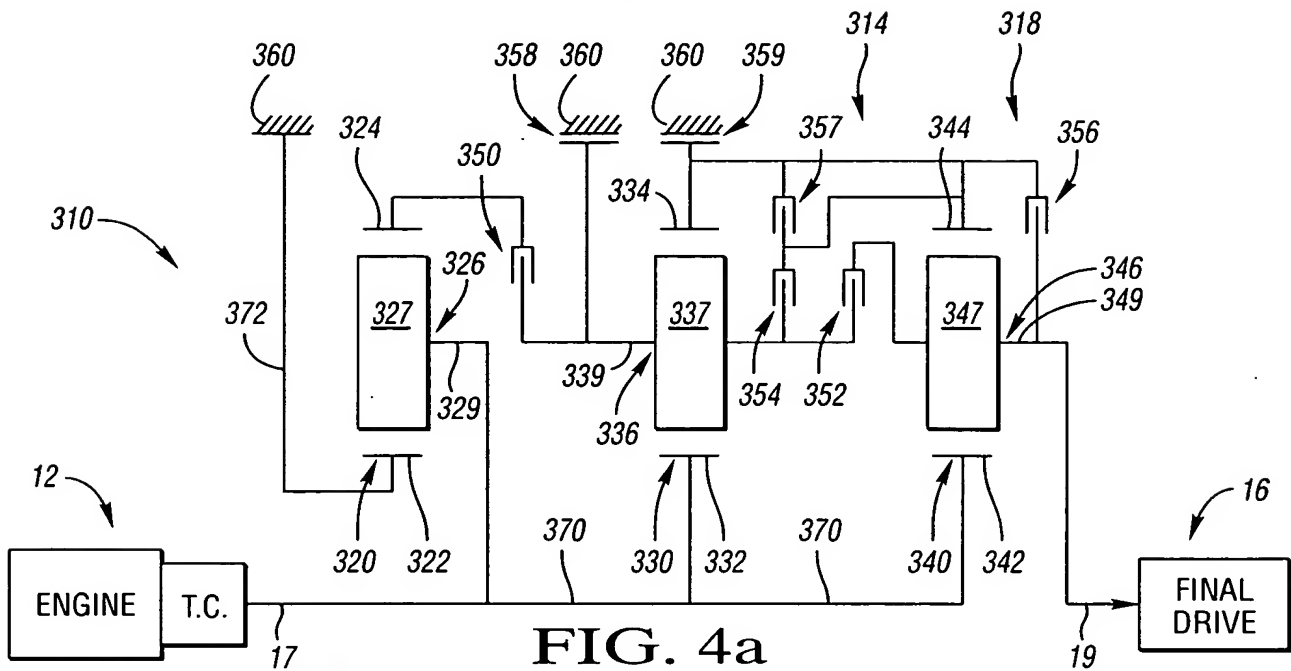


FIG. 4a

FIG. 4b

	RATIOS	350	352	354	356	357	358	359
REVERSE 2	-5.80					X	X	
REVERSE 1	-1.74				X		X	
NEUTRAL	0.00					X		
1	3.91					X		X
2	2.74		X					X
3	1.90			X				X
4	1.00			X		X		
5	0.70	X		X				
6	0.63	X	X					
7	0.59	X				X		
8	0.52	X			X			

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.71$ ,  $\frac{N_{R2}}{N_{S2}} = 1.74$ ,  $\frac{N_{R3}}{N_{S3}} = 2.91$

RATIO SPREAD	7.52
RATIO STEPS	
REV1/1	-0.44
1/2	1.43
2/3	1.44
3/4	1.90
4/5	1.44
5/6	1.10
6/7	1.06
7/8	1.14

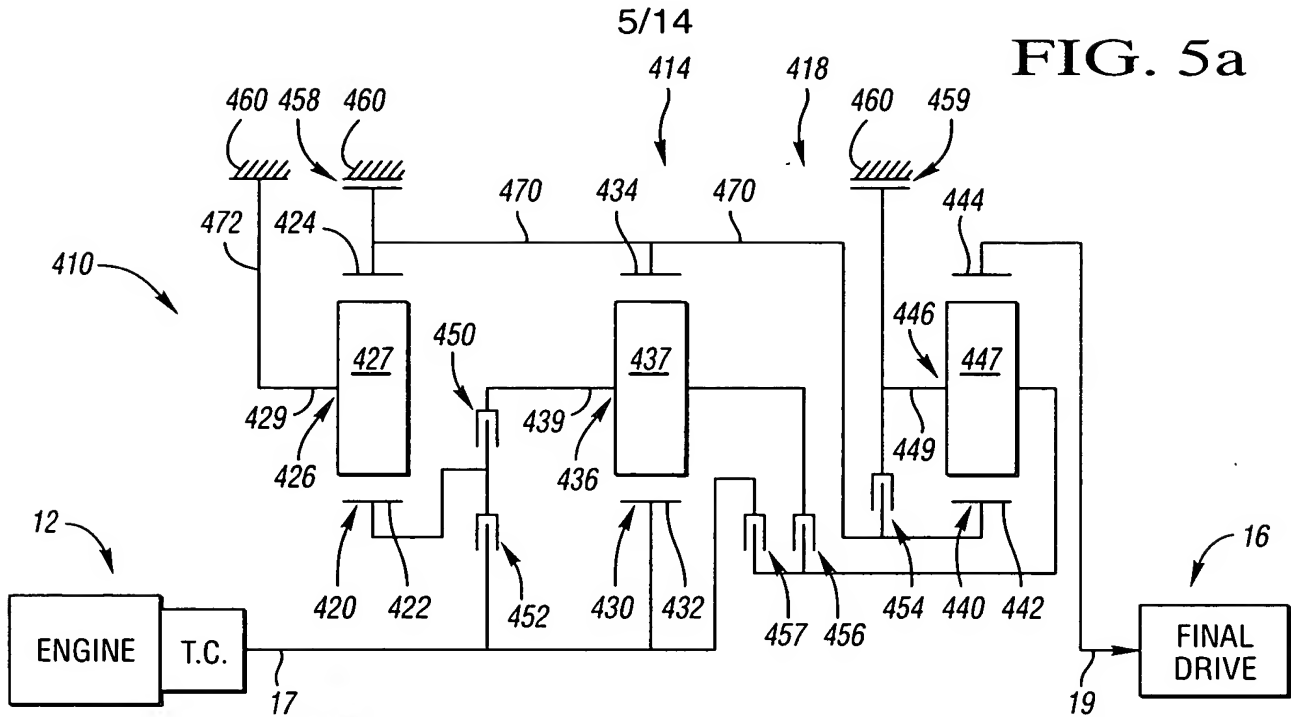


FIG. 5b

	RATIOS	450	452	454	456	457	458	459
REVERSE 2	-9.03	X		X				
REVERSE 1	-3.00		X	X				
NEUTRAL	0.00		X					
1'	20.53	X						X
1	6.82		X					X
2	3.43				X			X
3	2.31		X		X			
4'	1.90	X			X			
4	1.74				X		X	
5	1.00				X	X		
6	0.69					X	X	
7	0.67	X				X		
8	0.63		X			X		

(X = ENGAGED CLUTCH)

TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 3.00$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 2.28$

RATIO SPREAD	10.82
RATIO STEPS	
REV1/1	-0.44
1/2	1.99
2/3	1.48
3/4	1.33
4/5	1.74
5/6	1.44
6/7	1.03
7/8	1.07

6/14

FIG. 6b

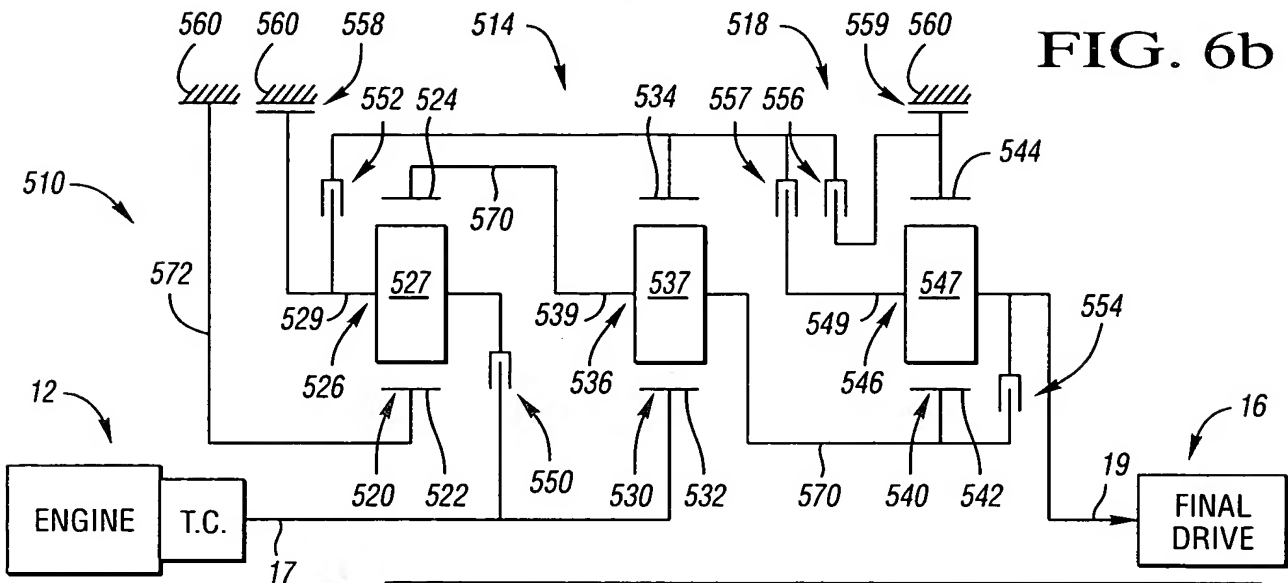


FIG. 6b

	RATIOS	550	552	554	556	557	558	559
REVERSE 2	-2.52				X		X	
REVERSE 1	-1.51					X	X	
NEUTRAL	0.00				X			
1	6.26				X			X
2	4.75					X		X
3	4.00		X					X
4	2.66		X			X		
5	2.10		X		X			
6	1.60		X	X				
6'	1.50	X						X
7	1.00			X	X			
8	0.60	X		X				
9	0.52	X			X			
10	0.48	X				X		

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.67$ ,  $\frac{N_{R2}}{N_{S2}} = 1.51$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	13.16
RATIO STEPS	
REV2/1	-0.40
1/2	1.32
2/3	1.19
3/4	1.50
4/5	1.27
5/6	1.31
6/7	1.60
7/8	1.67
8/9	1.15
9/10	1.08

7/14

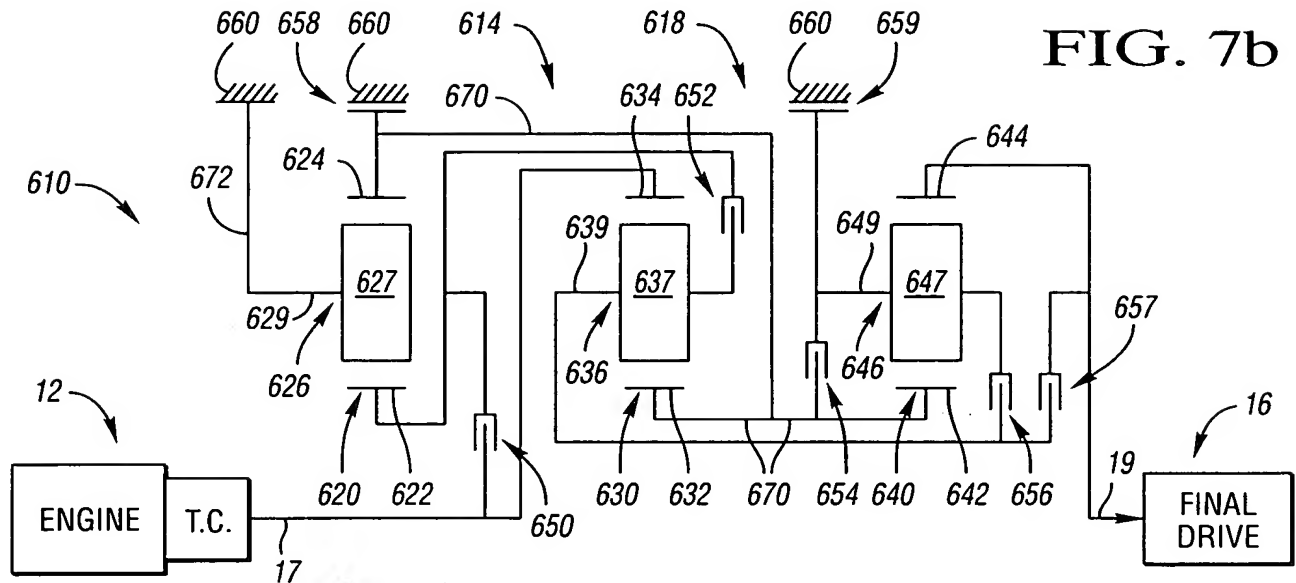


FIG. 7b

	RATIOS	650	652	654	656	657	658	659
REVERSE 2	-3.00			X	X			
REVERSE 1	-2.00		X		X			
NEUTRAL	0.00							
1	5.43			X				X
2	3.62	X						X
3	1.94					X		X
4'	1.60	X				X		
4	1.50		X			X		
5	1.33					X	X	
6	1.00				X	X		
7'	0.86				X		X	
7	0.82		X		X			
8'	0.80	X			X			
8	0.60				X			X

(X = ENGAGED CLUTCH)

RING GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.00$ ,  $\frac{N_{R2}}{N_{S2}} = 3.00$ ,  $\frac{N_{R3}}{N_{S3}} = 1.81$

RATIO SPREAD	6.77
RATIO STEPS	
REV2/1	0.55
1/2	1.50
2/3	1.87
3/4	1.29
4/5	1.13
5/6	1.33
6/7	1.22
7/8	1.37

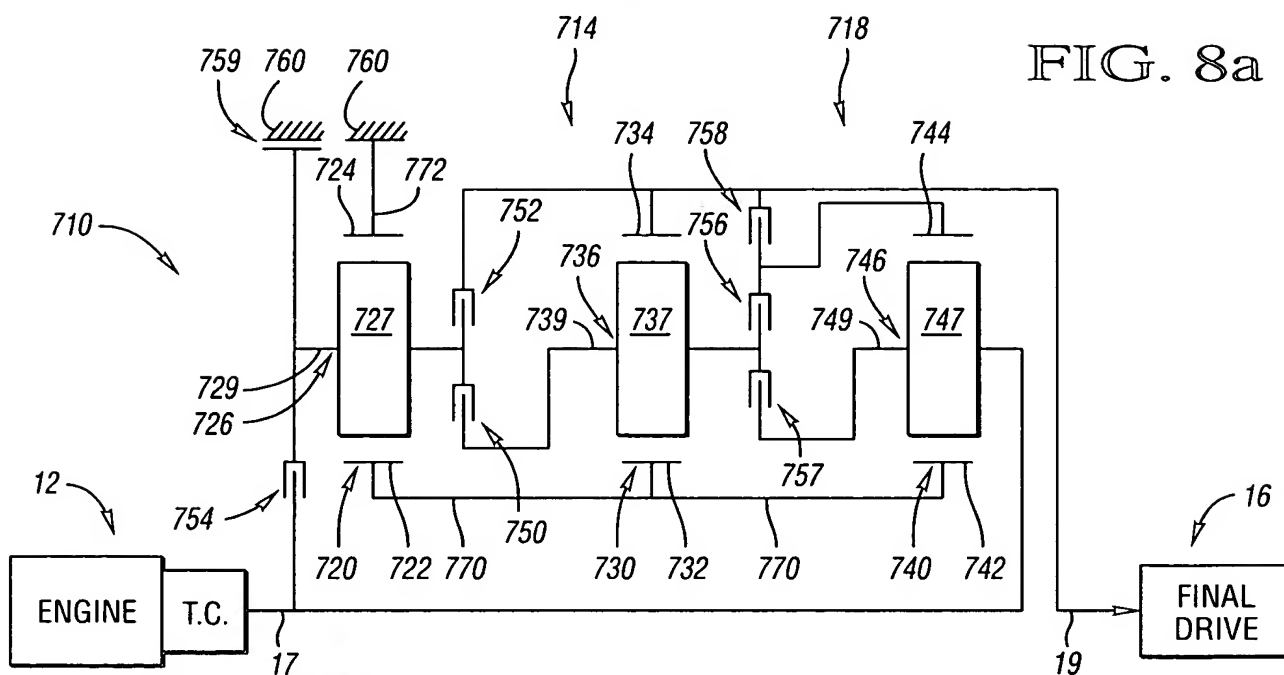


FIG. 8b

	RATIOS	750	752	754	756	757	758	759
REVERSE	-1.95			X	X			
NEUTRAL	0.00				X			
1	4.84	X			X			
2	3.38	X		X				
2'	3.05	X					X	
3	2.35			X			X	
3'	1.81		X		X			
4'	1.50		X			X		
4	1.43		X				X	
5	1.00				X		X	
6	0.75						X	X
7	0.71					X		X
8	0.53				X			X

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.72, \frac{N_{R2}}{N_{S2}} = 2.45, \frac{N_{R3}}{N_{S3}} = 3.00$$

RATIO SPREAD	9.08
RATIO STEPS	
REV/1	-0.40
1/2	1.43
2/3	1.44
3/4	1.64
4/5	1.43
5/6	1.33
6/7	1.06
7/8	1.07



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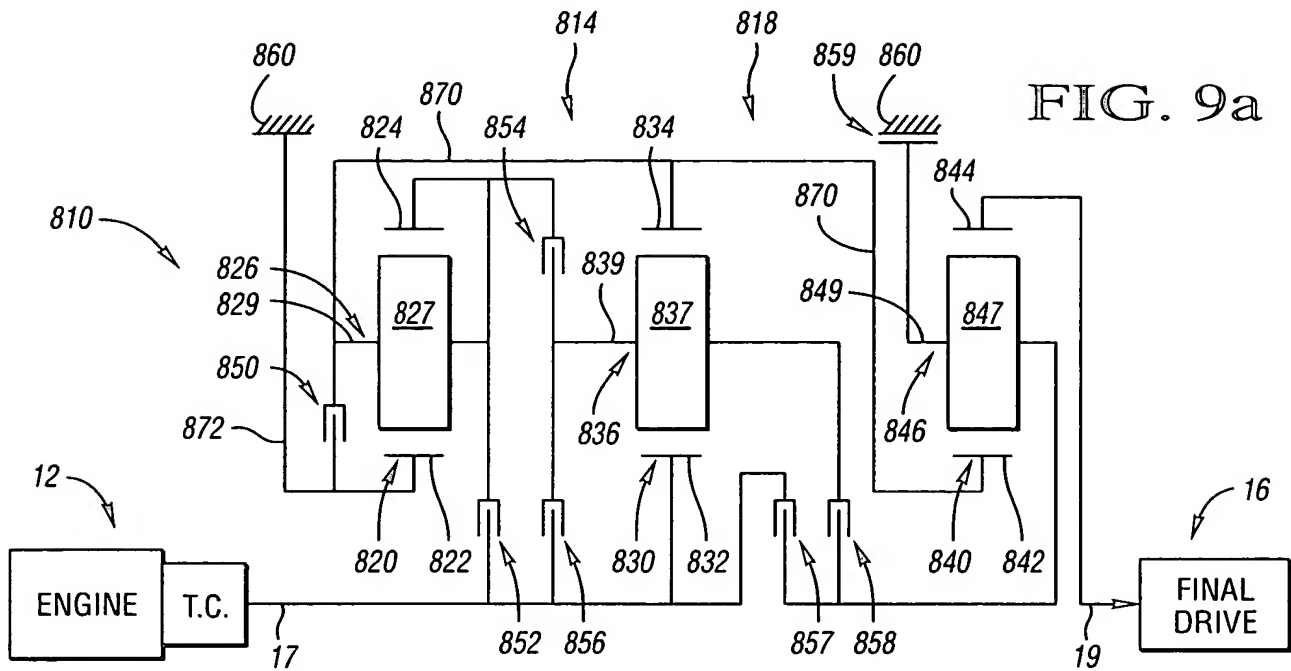


FIG. 9b

	RATIOS	850	852	854	856	857	858	859
REVERSE 3	-6.31			X				X
REVERSE 2	-3.28		X					X
REVERSE 1	-2.27				X			X
NEUTRAL	0.00							X
1	6.81						X	X
2	2.78	X					X	
3	1.69			X			X	
4	1.25		X				X	
5	1.00					X	X	
6	0.88		X			X		
7	0.78			X		X		
8	0.69	X				X		

(X = ENGAGED CLUTCH)

RING GEAR / SUN GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 2.27$ ,  $\frac{N_{R2}}{N_{S2}} = 3.00$ ,  $\frac{N_{R3}}{N_{S3}} = 2.28$

RATIO SPREAD	9.81
RATIO STEPS	
REV3/1	-0.93
1/2	2.45
2/3	1.64
3/4	1.36
4/5	1.25
5/6	1.14
6/7	1.13
7/8	1.12

10/14

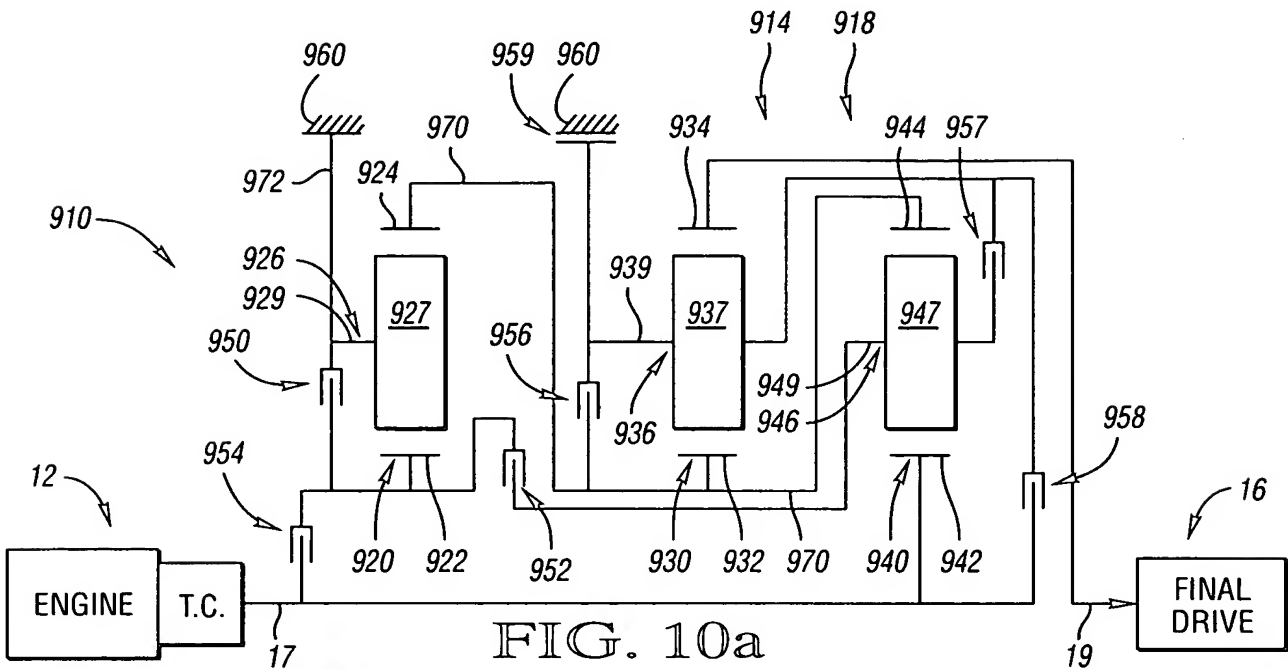


FIG. 10a

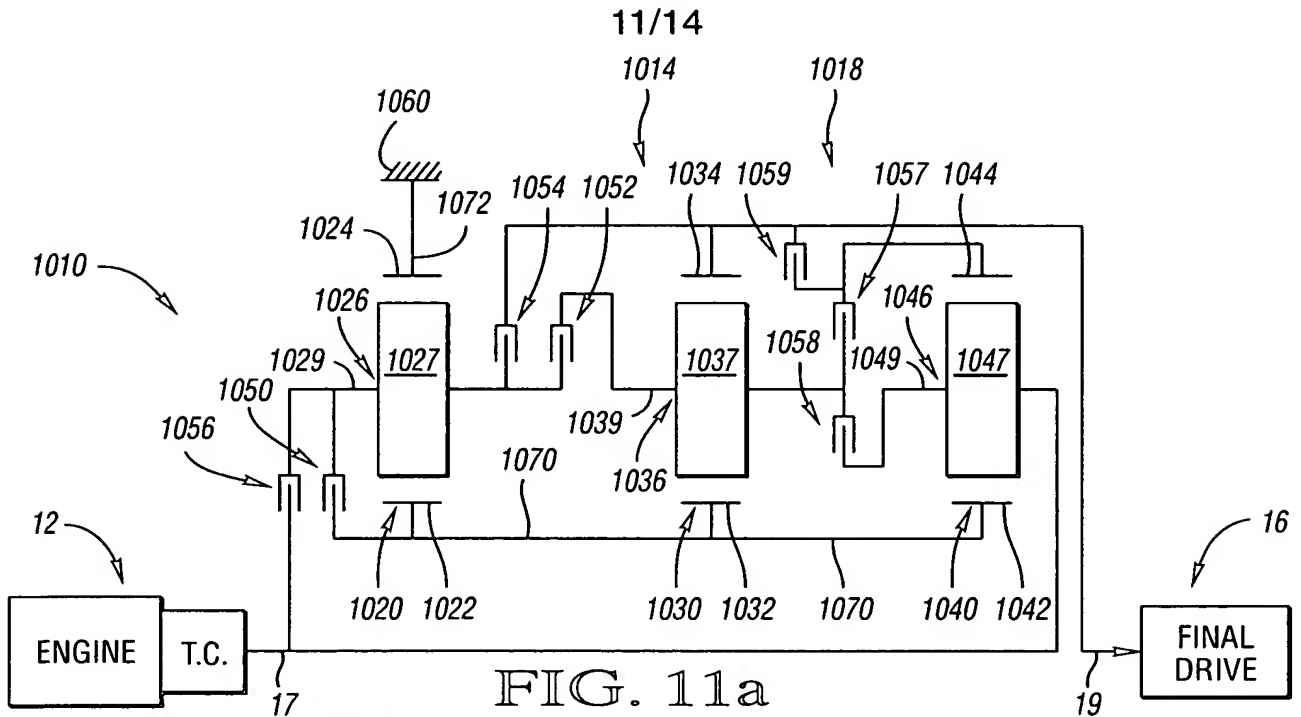
FIG. 10b

	RATIOS	950	952	954	956	957	958	959
REVERSE 2	-9.20		X		X			
REVERSE 1	-3.00			X	X			
NEUTRAL	0.00							X
1'	21.22		X					X
1	6.92			X				X
2	3.58					X		X
3	2.40			X		X		
4'	1.94		X			X		
4	1.78	X				X		
5	1.00					X	X	
6	0.70	X					X	
7	0.68		X				X	
8	0.63			X			X	

(X = ENGAGED CLUTCH)

$\frac{\text{RING GEAR}}{\text{SUN GEAR}}$  TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 3.00$ ,  $\frac{N_{R2}}{N_{S2}} = 2.31$ ,  $\frac{N_{R3}}{N_{S3}} = 1.55$

RATIO SPREAD	10.92
RATIO STEPS	
REV1/1	-0.43
1/2	1.93
2/3	1.49
3/4	1.35
4/5	1.78
5/6	1.43
6/7	1.03
7/8	1.07

FIG. 11b

	RATIOS	1050	1052	1054	1056	1057	1058	1059
REVERSE	-1.95				X	X		
NEUTRAL	0.00					X		
1	4.84		X			X		
2	3.38		X		X			
2'	3.05		X					X
3	2.35				X			X
3'	1.81			X		X		
4'	1.50			X			X	
4	1.43			X				X
5	1.00					X		X
6	0.75	X						X
7	0.71	X					X	
8	0.53	X				X		

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.73, \frac{N_{R2}}{N_{S2}} = 2.45, \frac{N_{R3}}{N_{S3}} = 3.00$$

RATIO SPREAD	9.08
RATIO STEPS	
REV/1	-0.40
1/2	1.43
2/3	1.44
3/4	1.64
4/5	1.43
5/6	1.33
6/7	1.06
7/8	1.33

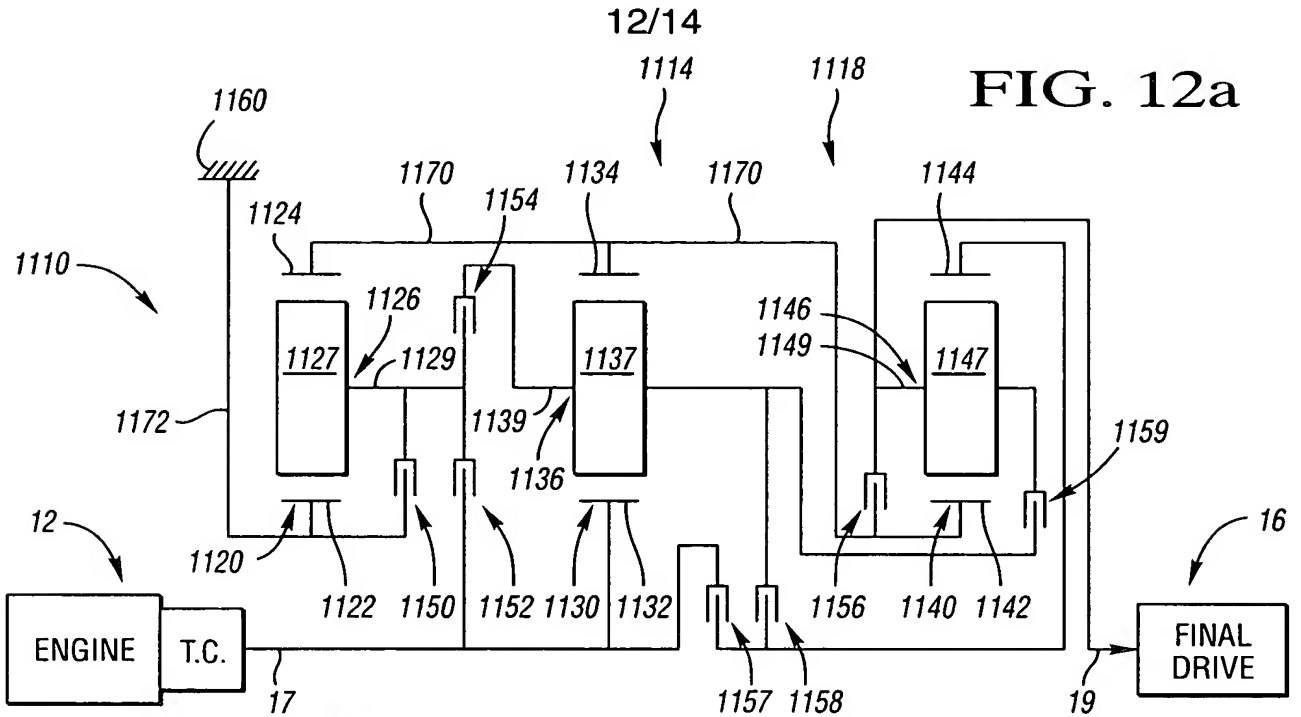


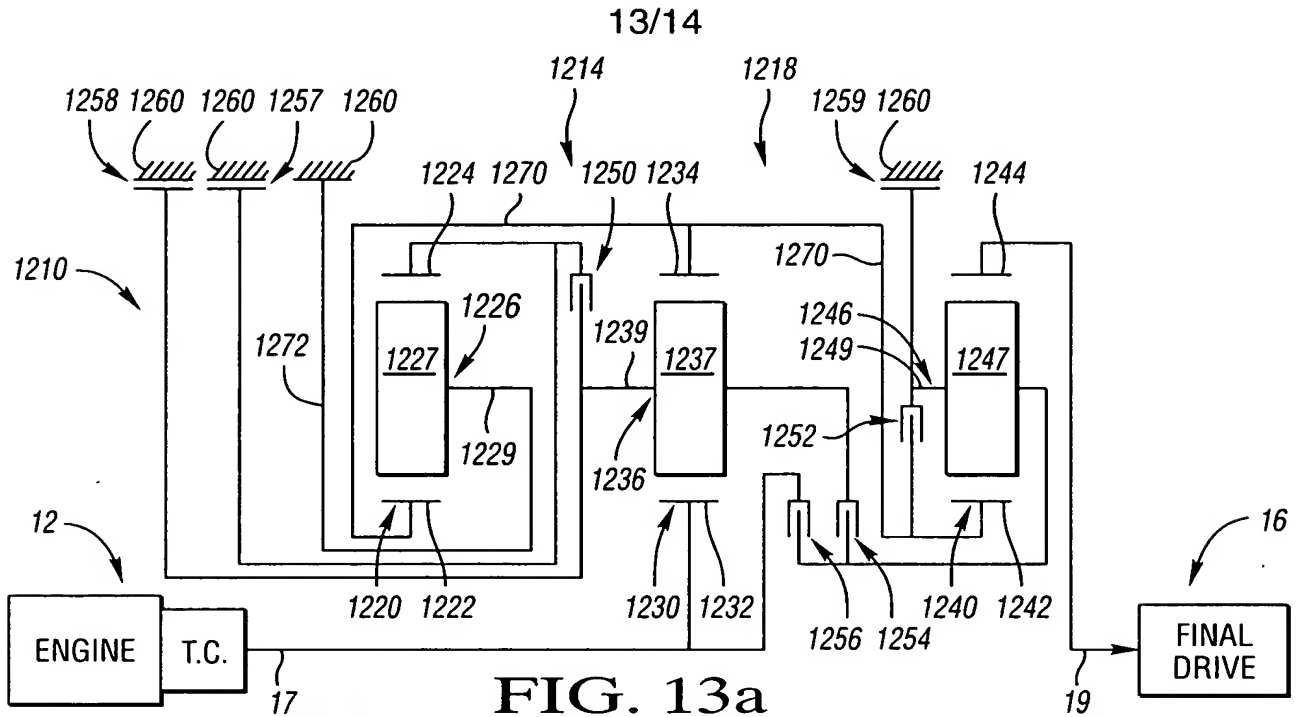
FIG. 12b

	RATIOS	1150	1152	1154	1156	1157	1158	1159
REVERSE 4	-3.30			X		X		
REVERSE 3	-0.74			X				X
REVERSE 2	-0.58			X			X	
REVERSE 1	-0.44			X	X			
NEUTRAL	0.00	X						
1	6.04	X					X	
2	3.62	X						X
3	1.67	X				X		
4	1.00				X	X		
5	0.79		X			X		
6	0.68		X					X
7	0.64		X				X	
8	0.60		X		X			

(X = ENGAGED CLUTCH)

RING GEAR / SUN GEAR TOOTH RATIO:  $\frac{N_{R1}}{N_{S1}} = 1.51$ ,  $\frac{N_{R2}}{N_{S2}} = 2.62$ ,  $\frac{N_{R3}}{N_{S3}} = 1.50$

RATIO SPREAD	10.05
RATIO STEPS	
REV4/1	-0.54
1/2	1.67
2/3	2.17
3/4	1.67
4/5	1.27
5/6	1.17
6/7	1.05
7/8	1.07



	RATIOS	1250	1252	1254	1256	1257	1258	1259
REVERSE 2	-3.17	X	X					
REVERSE 1	-1.51		X				X	
NEUTRAL	0.00	X						
1	7.65	X						X
2	3.64			X				X
3	2.34	X		X				
4	1.77			X		X		
5	1.00			X	X			
6	0.71				X	X		
7	0.65	X			X			
8	0.59				X		X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 1.51, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.41$$

RATIO SPREAD	12.92
RATIO STEPS	
REV2/1	-0.41
1/2	2.10
2/3	1.55
3/4	1.32
4/5	1.77
5/6	1.41
6/7	1.09
7/8	1.09

	RATIOS	1350	1352	1354	1356	1357	1358	1359
REVERSE 2	-3.17		X	X				
REVERSE 1	-1.51			X			X	
NEUTRAL	0.00		X					
1	7.20		X					X
2	3.43				X			X
3	2.27		X		X			
4	1.74	X			X			
5	1.00				X	X		
6	0.69	X				X		
7	0.63		X			X		
8	0.58					X	X	

(X = ENGAGED CLUTCH)

$$\frac{\text{RING GEAR}}{\text{SUN GEAR}} \text{ TOOTH RATIO: } \frac{N_{R1}}{N_{S1}} = 2.51, \frac{N_{R2}}{N_{S2}} = 1.51, \frac{N_{R3}}{N_{S3}} = 2.28$$

RATIO SPREAD	12.47
RATIO STEPS	
REV2/1	-0.44
1/2	2.10
2/3	1.51
3/4	1.31
4/5	1.74
5/6	1.44
6/7	1.10
7/8	1.10